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## EC73-486 Plotting Pleats for Skirts

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EC 73-486

# PLOTTING PLEATS

for  
SKIRTS



EXTENSION SERVICE, UNIVERSITY OF NEBRASKA-LINCOLN COLLEGE OF AGRICULTURE COOPERATING WITH THE  
U. S. DEPARTMENT OF AGRICULTURE AND THE COLLEGE OF HOME ECONOMICS  
E. F. FROLIK, DEAN J. L. ADAMS, DIRECTOR



# PLOTTING PLEATS for Skirts

Jane Speece  
Clothing Specialist

Pleats are folds in fabric which give controlled firmness. Pleats may fall from the natural waistline or may begin below a dropped waistline. They may be found in a bodice or in a sleeve. Pleats may be pressed or left unpressed, but wherever they are found in a garment, pleats should have an easy look.

Firm, resilient fabrics such as silk, wool, cotton and some of the synthetics work best for pleats. Fabrics such as durable press or soft knits do not pleat as well. They may be used, however, if they are edged stitched to hold the crease. Loosely-woven fabric, which does not press crisply and tends to sag when formed into pleats, should be avoided. Test your fabric to be sure that it will hold the kind of pleat that you want for the style of garment that you are making.

Pleats are not usually lined or underlined. If you feel that some kind of lining is needed, cut the lining as for a straight skirt and attach at the waist.

There are four main kinds of pleats (Fig. 1):

**The straight pleat**, is sometimes called the side or knife pleat. Pleats all turn in the same direction. The fold runs from right to left so that the placket will be concealed by a pleat.

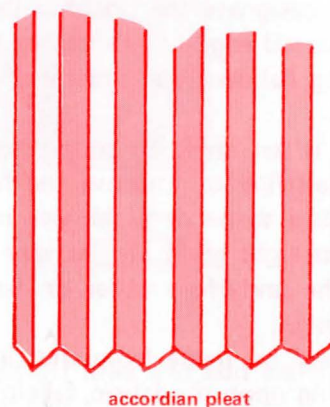
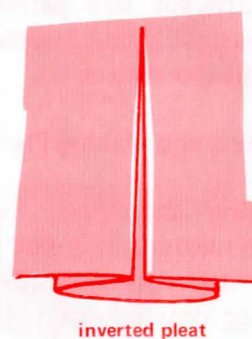
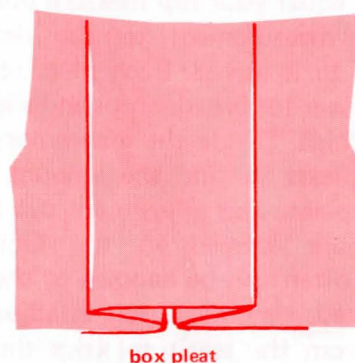
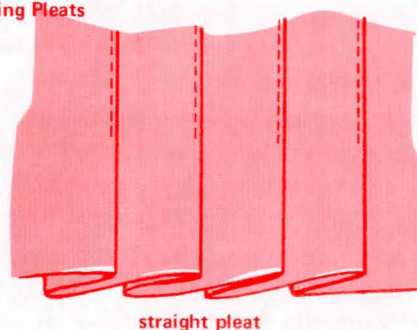
**The box pleat** forms a panel when two straight pleats are turned away from each other and the creases or folds turn in opposite directions. On the wrong side the crease edges turn toward each other.

**The inverted pleat** is the opposite of the box pleat. Two straight pleats are turned toward each other so that the folds meet on the outside. The wrong side will have a box pleat with the folds turning away from each other. A skirt with box pleats all the way around will alternate a box pleat with an inverted pleat.

**The accordin pleat** is a narrow pleat with a center fold. This kind of pleat cannot be carried out successfully with home pressing equipment and must be done commercially. Lengths of the pleated fabric may be purchased, however, for home sewing.

Fig. 1

Plotting Pleats





## Choosing and Measuring the Pattern

Choose a pleated skirt pattern according to hip measurement to be sure that the pleats fit smoothly over the hips. Usual ease allowance for pleated skirts is 2 to 2½ inches. A pleated blouse or dress pattern should be chosen by bust measurement. Adjustments may then be made between the hip and the waist to improve the fit.

Compare the pattern measurements with your own as you would for an unpleated garment. Compare hip measurement by measuring the pattern at the point that corresponds with the fullest part of your hip. To find the hip measurement, measure the width of the fold of one pleat (Fig. 2), multiply by the number of pleats, then add the width of any unpleated panels. The total should equal your hip measure plus the ease.

The hip measurement can be decreased or increased up to 2 inches. Each pleat can be made slightly narrower for broader hips and slightly wider for slimmer hips. Divide the inches needed by the number of pleats to find the amount needed to change each pleat. This adjustment can be made as the pleats are formed in the fabric. Minor adjustments often can be handled as the fit of the skirt is checked. Hem measure and adjustments are also made from the waist to keep the fabric on grain.

If major adjustments are needed in a skirt or a bodice, buy a different size pattern that better reflects your measurements. Pleated bodices are more difficult to fit than skirts.

## Marking and Making Pleats

"Precise Plotting" should become the slogan of all who work with pleats. It is important to measure accurately and to follow pattern markings. Designated lines or dots on the pattern will show where the crease of the pleat will be. A different set of lines will designate the position line where the folded or creased edge will be placed. As a general rule, pleating follows the straight-of-grain of the fabric.

Patterns often angle to shape the pleat as it nears the waistline to improve the fit. If you are working with a stripe or plaid, you may prefer to extend the straight grain all the way to the waist and make the underfold wider or narrower to fit the fabric design.

Pleats may be made from the right or wrong side depending upon the fabric, fabric design or the

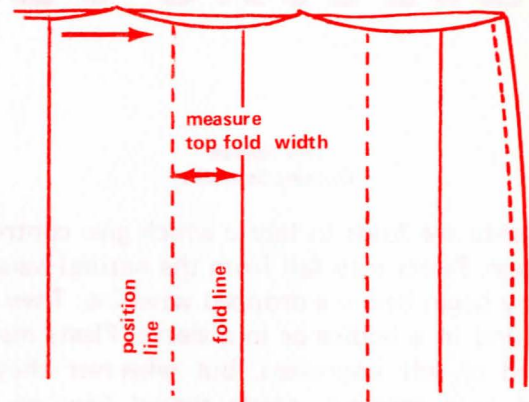


Fig. 2

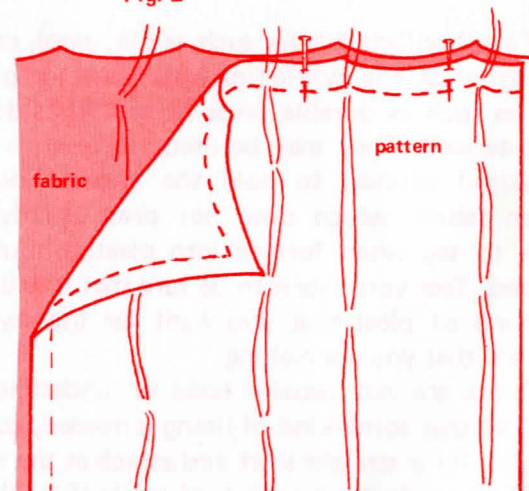


Fig. 3 Tailor tack position and crease lines

way the pleats turn. Occasionally, pattern or sewing books suggest marking lines with a tracing wheel on the wrong side, then transferring the lines to the front with basting thread. It usually is safer to use tailor tacks because tracing marks do not always come out. You may find, too, that working from the right side proves to be more satisfactory in checking the accuracy of your pleats. Use basting threads of different colors for the position and crease lines to prevent confusion as you match lines (Fig. 3).

Once the position and crease lines are marked, stitch the lengths of fabric together at the seamline. Occasionally, a seam will fall near or along the edge of a fold. Seam allowances may be pressed to one side so that they will not interfere with the fold. Leave one seam open, usually the placket seam, because it is easier to pleat a flat piece. This last seam will be stitched after the pleats and other seams are stitched and pressed.



When making pressed pleats, put the skirt hem in before pleating if you have decided upon the finished length. Leave several inches of the hem unfinished on each side of the unstitched seam or just baste in place at this time. If you are uncertain about the fit of the skirt or the final length, leave about 8 inches free in the lower portion when you pleat. You can then finish the hem after the first fitting. In either case be sure that the hem is in before you give a final press to the pleats.

Hems for unpressed pleats are put in last as for a straight skirt. The pleats are usually pressed for a length of about 2 inches below the waistline. The lower portion assumes soft folds or fullness.

Use a surface large enough to lay out the section of the fabric, such as an ironing board or cutting board. Lap the fold line to the position line. Pin the pleat at the lower edge, then the upper edge, followed by pins at intervals between these points. Beginning at the lower portion, baste through all layers along the fold. Diagonal basting helps hold the pleat firmly in place during construction (Fig. 4). Once the flat piece is pleated, stitch the final seam and insert the placket.

Using a press cloth, steam press the garment just enough to hold the pleats. The final press to set the pleats will be given after checking the fit and finishing the hem. Do not steam the lower hem portion if you have not yet put in the hem.

Before attaching the pleats to a waistband, machine baste along the waistline and try on the skirt for fit. For garment areas other than skirts, the same method is used to check the pleats fitting into that area. Basting is left in the pleats until the garment is finished.

## HOW DO YOU LOOK IN PLEATS?

Some women feel that their waists are too small in proportion to their hips or that their hips are too rounded to allow a smooth flow of pleats from waist to hem. They prefer to substitute a wide band from the waist to the fullest part of the hip. The pleats are attached to the band at the hip. If you would like to try this, use a straight skirt pattern for the band. All fitting can be done as for a straight skirt. The lower part of the pleated skirt is used to supply the pleats.

Fold the pleated skirt pattern to form the pleats and lay the straight-skirted pattern over it. Mark the cut-off lines on each pattern (Fig. 5a). Be sure that side seams match accurately. Adjust the pleats if necessary so that the two patterns match. Cut

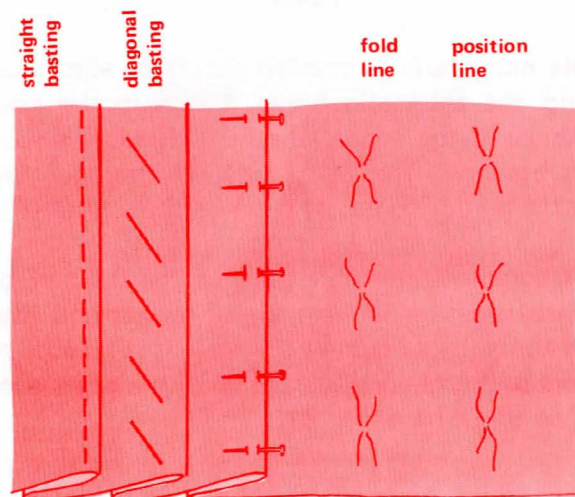


Fig. 4

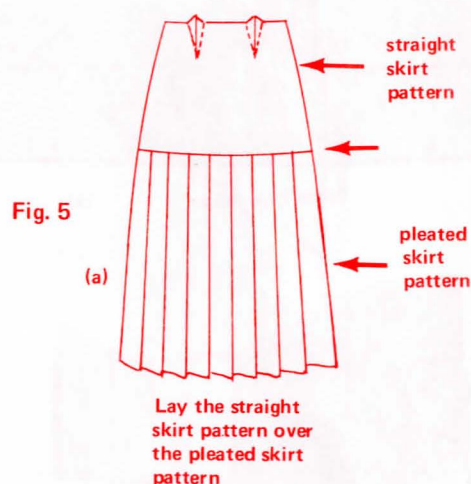
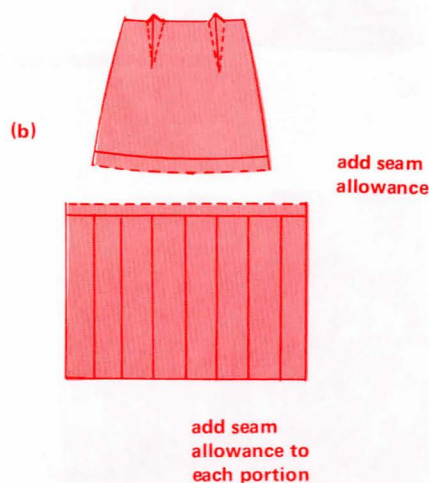


Fig. 5



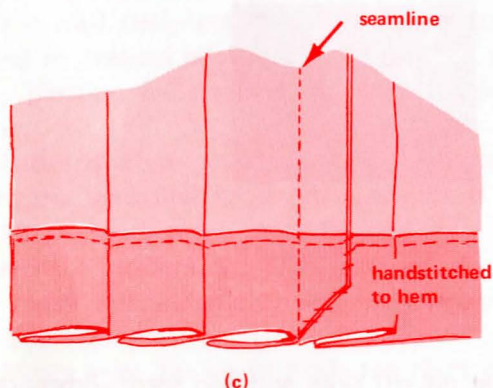
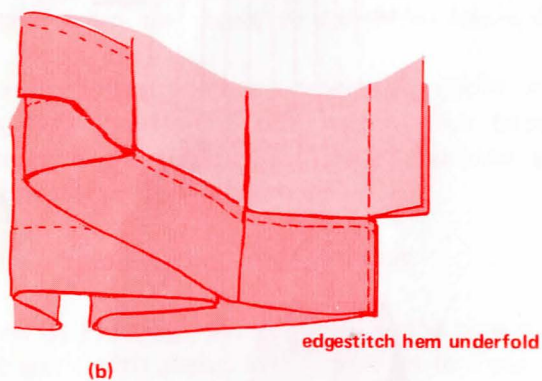
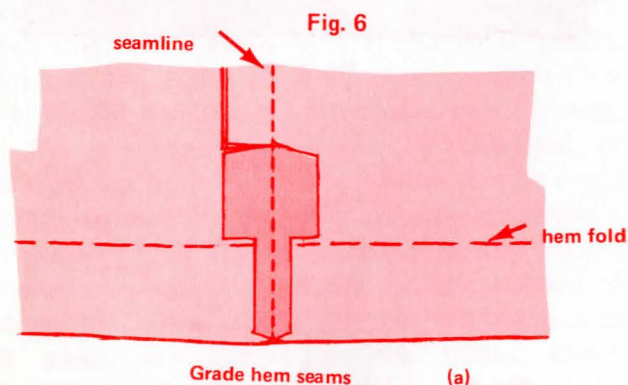
patterns at cut-off lines and add seam allowance to each part (Fig. 5b).



## Hems

As much bulk as possible should be eliminated around the seam allowances. Clip into the seam allowance at the top of the hem. Grade the seam and press open (Fig. 6a). Edgestitch the underfold after the hem is turned to help hold the pleat (Fig. 6b).

A common technique for finishing the hem on the final seam is to hem the skirt first and then stitch through the hem as the seam is stitched. The corners can be clipped and the raw seam edges hand stitched to the hem (Fig. 6c).

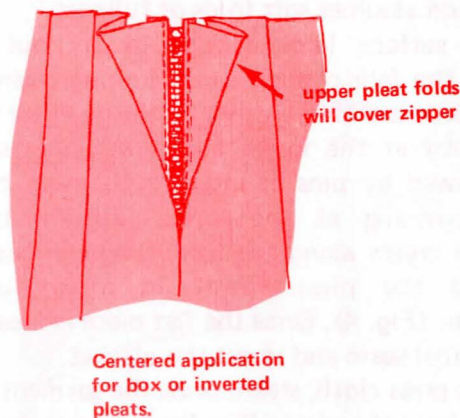


## Plackets

**Box or Inverted Pleats.** The zipper is placed in the underportion of the pleat where the folds meet so that it will be covered. Use an invisible zipper or regular zipper with the centered application.

Stitch the lower portion of the seam. Press the seam open. Insert the zipper. Baste along the edges of the pleat folds and position them over the zipper (Fig. 7). Machine baste the waistline seam to check the fit. Complete the hem.

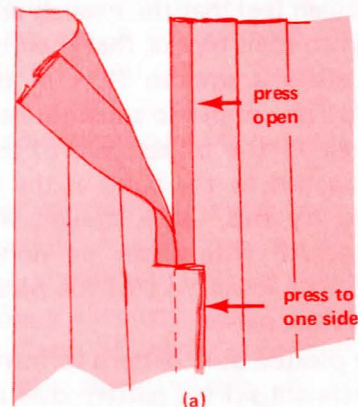
Fig. 7



**Straight pleats.** The last pleat should be wide enough to cover the placket area. The seam should lie on an inside fold. A regular skirt zipper is used.

Stitch the seam up to the placket opening. Clip into the seam just below the placket area. Press the seam allowances to one side below the placket and open through the placket area (Fig. 8a).

Fig. 8





Turn the skirt to the right side. Pin the folded edge of the seam allowance of the undersection as closely to the zipper teeth as possible and still allow the zipper to open easily. Stitch on the top (Fig. 8b).

Turn the skirt to the wrong side and pin the other side of the zipper to the seam allowance. The edge of the tape will be about  $\frac{1}{4}$  inch from the raw edge. The zipper teeth will lay along the edge of the seamline rather than on it (Fig. 8c).

Baste and stitch the zipper to this seam allowance only. Stitch close to the zipper teeth. Then match the fold line to the position line of the final pleat.

If you have plotted your pleats to take advantage of a certain pattern in the fabric, the seam line may be in such a place that the zipper does not lay entirely flat. Take a tiny dart in the skirt to the left of the zipper to solve the problem. The pleat fold will cover it.

In other cases, you may find the necessary placket seam in an inconvenient place because you have used the pattern in your fabric as a guide to laying the pleats.

Bind the raw edges of the seams through the placket area. Cut each strip the length of the opening and 2" wide. Right sides together, key the raw edge of the binding with the raw edge of the seam. Stitch along the  $\frac{5}{8}$ " seam allowance. Press seam toward the strip, then turn and stitch along the edge of the first seam. Sew two or three snaps on the skirt and underfold to hold placket and pleat on the grainline (Fig. 8d).

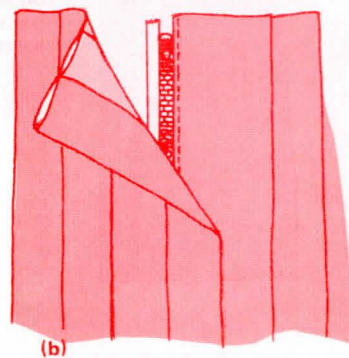
## FITTING PROBLEMS

The pleats should fall in a smooth line from the waist to the hip and fall straight from the hip to the hem. If the pleats overlap, there is too much ease. If the pleats open up, there is not enough.

Adjustments are made from the waist and spread throughout each pleat rather than adjusting at seamlines as in a straight skirt. Care must be taken not to distort the grainline on the outside fold. Do not try to add or subtract more than 2 inches. Divide the amount needed by the number of pleats to decide how much you need to take out or add to each pleat.

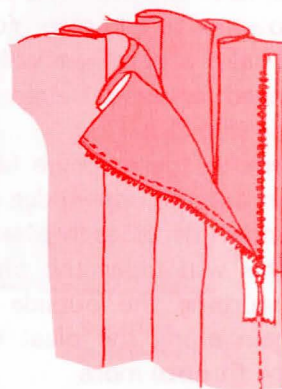
There are several ways to fit the skirt, depending upon how much adjustment is needed:

**Method 1:** If the skirt fits well except for some looseness in the waist, the machine basting can be



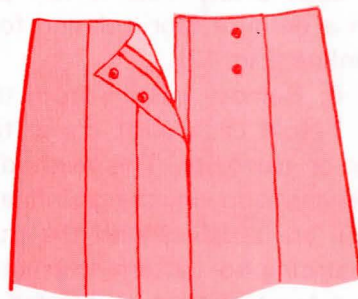
(b)

topstitch close  
to zipper teeth



(c)

Lay zipper  
teeth along  
edge of seamline



(d)

Snaps may  
be needed



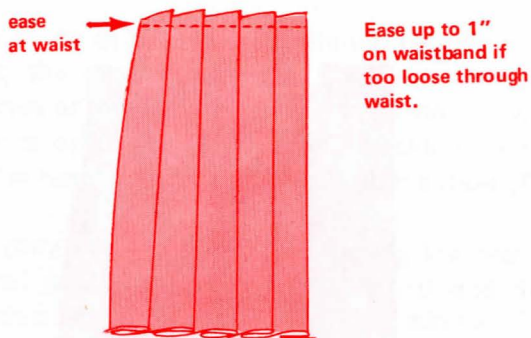


Fig. 9

drawn up to allow up to 1'' to be eased on the waistband without showing (Fig. 9).

**Method 2:** To raise or lower the waistline on skirts which have been angled in as they approach the waist. You can raise the skirt and take a wider waistline seam allowance to add ease. You can drop the waistline and take a narrower waistline seam allowance if you need less ease. Retain  $\frac{1}{4}$  to 1 inch ease at the waistline (Fig. 10).

**Method 3:** Remove the machine basting from the waistline. Open out the upper edge of the pleat and deepen the underside of each pleat. Keep the space uniform. This will taper the pleats to the waist without disturbing the outside pleat line. Baste in place again along the pleat creases and waistline. Check the fit once more.

**Method 4:** Remove the machine basting from the waistline. Open out the upper edge of the pleat and take a tiny dart in the underfold of each pleat. This will decrease the size of the pleat without changing the foldline (Fig. 11).

**Method 5:** Remove machine basting from the waistline. Open out the edge of each pleat and taper the position line and foldline of each pleat from the hip to the waist to decrease or increase the amount allowed in each pleat. This is not practical for fabrics with a definite fabric design following the straight grainline (Fig. 12).

**Method 6:** Remove basting from the waistline and pleats. Refold each pleat crease to make the pleats wider or narrower. This method works well for fabric designs following the grainline.

Once you are satisfied with the fit, finish the garment according to pattern instructions. Pleats attached to a low waistline or inserted in a bodice may be stabilized by a double row of stitching as they are joined to the main part of the garment. One excellent method is to stitch seam or twill tape into the seam as the pleats are stitched into place.

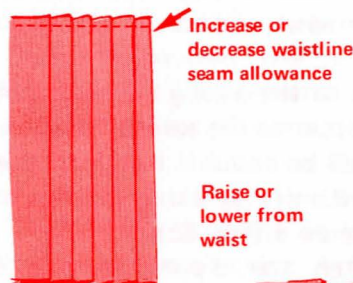


Fig. 10

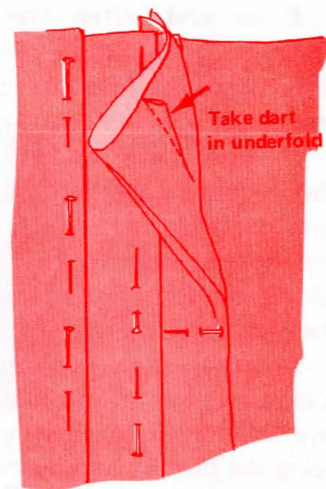


Fig. 11

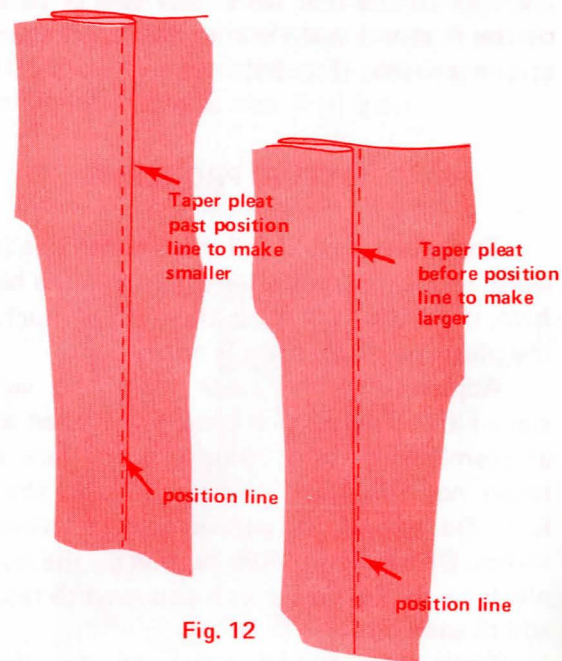


Fig. 12



Using a press cloth, steam press the pleats along the edge of the fold. Press on the wrong side, then the right side of the garment. Remove bastings and give the pleats a final press.

## EDGE STITCHING

Edge stitching will help hold a sharp crease and is an advantage for fabrics which do not retain a good press along the crease line (Fig. 13). Edge stitching is done after the placket and hem are completed but before the waistband is applied. It is directional. Stitch from the hem up to the waistline to prevent stretching the fabric.

Stitching on the underfold will not show on the outside. Stitch along the crease line from the lower to the upper edge. This will keep the pleats from twisting over a period of time.

Topstitching can be an attractive part of the design. The pleats can be topstitched from just the hipline through the waistline or the whole pleat may be topstitched. If topstitching is preferred for just the upper portion, begin at the hipline and stitch through all layers.

To topstitch the whole length of the pleat stitch along the edge of the outside crease all the way to the waist. Or you may prefer stitching along the creased edge to the hipline, then stitching through all layers from the hip to waistline.

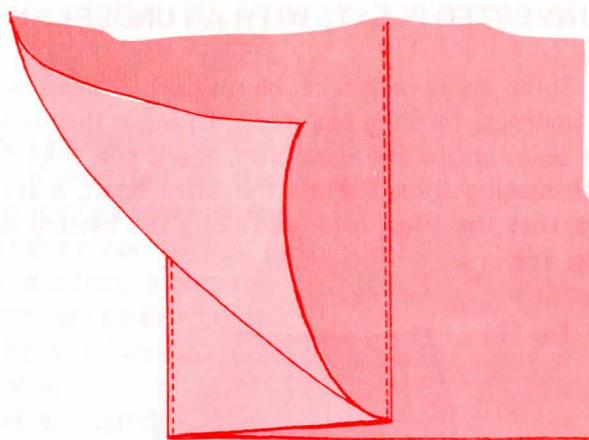


Fig. 13 Stitch fold edges for added sharpness.

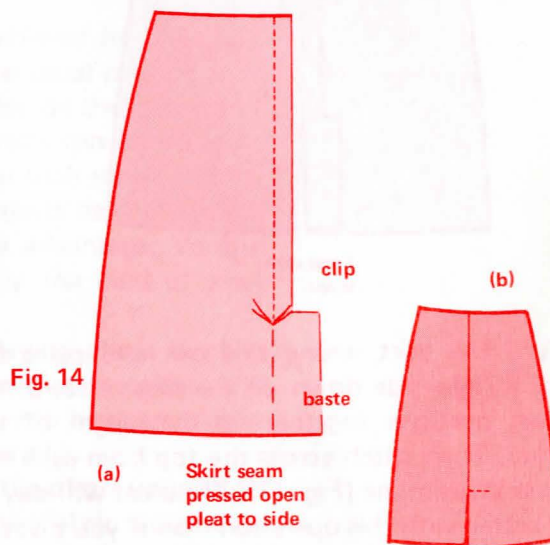


Fig. 14

Skirt seam pressed open pleat to side

## STRAIGHT PLEAT IN A SEAM

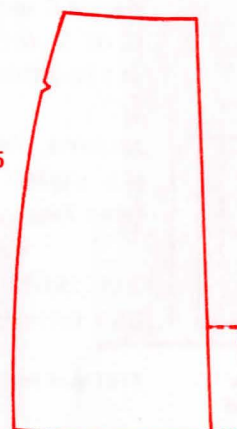
Stitch the garment seamline above the pleat, then begin at the seamline and stitch across the top of the extension. Begin a new stitching line and stitch the length of the extension.

The skirt seam should be extended by basting through the length of the pleat extension. This will give accuracy in finishing the pleat. Make a diagonal clip into the seam allowance at the point where the skirt seam ends and the extension seam begins (Fig. 14).

Press the skirt seam open and the extension to the side. The direction the extension is pressed will depend upon where it falls on the garment. Turn the skirt to the right side, stitch through all layers across the top of the extension (Fig. 14b). Remove any previous bastings. Press.

A straight pleat may be added to the seam in a lower portion of a skirt or jacket by cutting an extension as the garment is cut out (Fig. 15).

Fig. 15



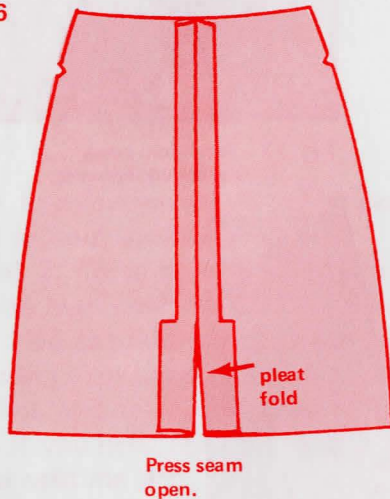
Add an extension to your pattern for pleat



## INVERTED PLEATS WITH AN UNDERLAY

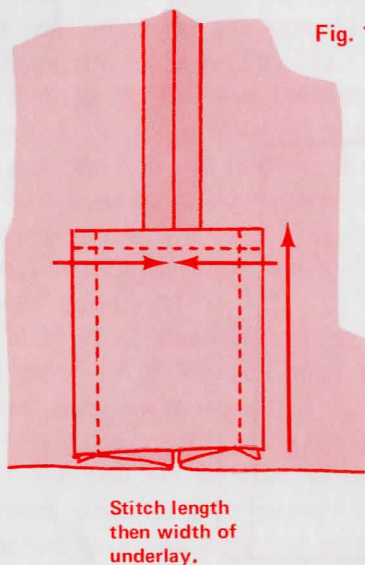
Some skirts or jackets have inverted pleats with an underlay forming the pleat. To make this, stitch the seam above the extension. Mark the fold line with basting thread. Press the seam open, making sure that the pleat fold falls along the basting line (Fig. 16).

Fig. 16



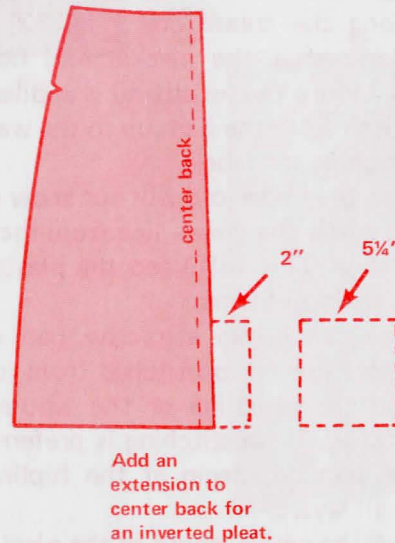
Turn the skirt wrong side out and place the underlay right side down on the pleat area. Stitch the two portions together up the length of the underlay. Then stitch across the top from each end to the skirt seamline (Fig. 17). The pleat will stay in place better with this operation than if you pivot at the corners. Press the seams flat. Turn the garment to the extension. Press.

Fig. 17



An inverted pleat can be added to a seam by adding 2 inches to the seam allowance throughout the length of the pleat. The separate underlay should measure  $5\frac{1}{4}$  inches (4 inches for underlay and  $\frac{5}{8}$  inch seam allowance on each side). The length of the pleat may vary, but 6 to 8 inches is usual (Fig. 18).

Fig. 18



## USING COMMERCIALLY PRE-PLEATED FABRICS

Pre-pleated fabrics are bought by the yard. To figure how much yardage you will need, add about 2 inches for ease plus seam allowances to your hip measurement. This will give you the width. Don't be skimpy on the width measurement. This pleating cannot be let out. Here are two examples of how to figure your seams.

hip measure	34"	37"
plus ease	2"	2"
plus seam allowance	$2\frac{1}{2}" (5/8" \times 2 \times 2)$	$1" (\frac{1}{2}" \times 2 \times 1)$
(Allowance $\times 2 \times$ no. seams)		
Amount needed	$38\frac{1}{2}"$	40" amount needed



Stitch the side seams leaving an opening for the placket. The placket opening should fall on the underside of the pleat. Trim out extra material so that the placket will fall in the right place.

Take two rows of ease stitching along the waistline seam so that the pleats may be eased onto the waistband. If more needs to be taken out, take a small dart in the underfold of each pleat or taper the pleats. Install the zipper and waistband.

### PLEATING WITH PLAIDS, CHECKS OR STRIPES

Unusual effects may be achieved by pleating a fabric with a pattern in it. The usual method is to place the dominant line of color on the crease line, but other beautiful design effects can be made by choosing a particular color you wish to emphasize. Try folding your fabric into pleats before you cut to use the pattern to its best advantage. Various effects will also be created by the kind of pleat used.

Matching seam lines and laying pleats in plaid may necessitate extra fabric so that the pleats will continue to follow the design you have set. Allow for this when you buy the material.

You might enjoy plotting the pleats yourself to take advantage of a design in the fabric rather than depending upon a paper pattern. Both width and length need to be figured. Decide what length you want the skirt and add about 6 inches. This will allow for a waistline seam allowance, hem and waistband.

To figure the width: Hip measurement plus 2 inches for ease plus seam allowances times 3 equals the width needed. You will need from 2 to 4 lengths of fabric, depending upon the width of the material and size of the design.

This formula gives the maximum amount needed. Try folding the fabric in pleats before it is cut off the bolt. You may find that you will need less fabric by making pleats of less width.

Plotting pleats takes extra time and effort, but taking the time to be accurate and precise will result in a special look to your garments.

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